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CONSERVATION ALERT

Records of four Critically Endangered songbirds in the markets of Java suggest domestic trade is a major impediment to their conservation

VINCENT NIJMAN, SUCI LISTINA SARI, PENTHAI SIRIWAT, MARIE SIGAUD & K. ANNE-ISOLA NEKARIS

Introduction

Bird-keeping is a popular pastime in Indonesia, and nowhere more so than amongst the people of Java. It has deep cultural roots, and traditionally a *kukilo* (bird in the Javanese language) was one of the five things a Javanese man should pursue or obtain in order to live a fulfilling life (the others being *garwo*, a wife, *curigo*, a Javanese dagger, *wismo*, a house or a place to live, and *turonggo*, a horse, as a means of transportation). A *kukilo* represents having a hobby, and it often takes the form of owning a *perkutut* (Zebra Dove *Geopelia striata*) or a *kutilang* (Sooty-headed Bulbul *Pycnonotus aurigaster*) but also a wide range of other birds (Nash 1993, Chng *et al.* 2015), with indeed Diamond *et al.* (1987) commenting that ‘Almost all birds that can be caught and kept alive in a cage for at least several hours are sold at the [bird] market’.

The scale of the trade is enormous; Basuni & Setiyani (1989) estimated, based on an average of 35 birds sold per vendor per day, that during December 1987 about 150,000 birds of at least 65 species entered the trade through Pramuka market, Jakarta, alone. Nash (1993) reported the presence of 20,500 wild-caught birds of 77 species in Pramuka on a single day in September 1992. On the basis of an average of eight birds sold per day per vendor he estimated the monthly turnover to be in the order of 40,000 wild-caught birds. More recently, in June 2014 Chng *et al.* (2015) counted 16,000, presumably mostly wild-caught, birds of 180 species in Pramuka. Each trader had an average of almost 200 birds on display and using the same sales estimates as Nash (1993) this would suggest a monthly turnover of about 22,000 birds.

Both Nash (1993) and Jepson & Ladle (2005) estimated the number of wild-caught songbirds that needed to be caught to meet the demand from bird-keepers on Java. Nash (1993) estimated monthly turnovers of 5,000–10,000 wild-caught birds for each of 12 bird markets in western Indonesia, nine of which were located on Java and Bali. This, in addition to the 40,000 sold in Pramuka, suggested that between 600,000 and

1.2 million wild-caught birds (the vast majority of them songbirds) were sold in the Java and Bali markets each year. Taking a different approach, Jepson & Ladle (2005) made use of a survey of randomly selected households in the Javan cities of Jakarta, Bandung, Semarang and Surabaya, and Medan in Sumatra, which together make up a quarter of the urban Indonesian population, to estimate that between 600,000 and 760,000 wild-caught native songbirds were acquired each year. Extrapolating this to the urban population of Java, which amounts to 60% of Indonesia’s total, it suggests that a total of 1.4–1.8 million wild-caught native songbirds were acquired. This has resulted in a large number of songbirds being threatened with extinction largely, if not exclusively, due to trade (Collar *et al.* 2012, Eaton *et al.* 2015), a phenomenon that has been labelled as the ‘Asian songbird crisis’.

Regulations are in place to restrict what can be sold in these markets, including quotas for species which are not protected by law and bans on the sale of wild-caught individuals of protected species, but these are rarely, if ever, enforced for all but perhaps the highest-profile species (Chng *et al.* 2015). While concerns about the effect of bird keeping on wild populations have been expressed for decades (Diamond *et al.* 1987, Basuni & Setiyani 1989, Nash 1993), in recent years it has become clear that trade is now the main threat to an increasingly large number of bird species (Collar *et al.* 2012, Owen *et al.* 2014, Chng *et al.* 2015, Eaton *et al.* 2015). Monitoring the trade in some 200 species of birds is not practical, but a focus on a small number of indicator species instead could be a useful strategy (e.g. those species that are globally threatened, endemic to individual islands in Indonesia, or are traded in particularly large volumes). Between 16 and 29 August 2016 we surveyed 12 bird markets in West Java, focusing on four Critically Endangered songbirds that are endemic to Java and/or Bali. We report here our observations and highlight differences and similarities in their trade.



SUCILISTINA SARI

Plate 1. Black-winged Myna *Acridotheres melanopterus*, August 2016.

Study species

Bali Myna *Leucopsar rothschildi*

This Balinese endemic has been formally protected in Indonesia since 1970 (Noerjito & Maryanto 2007). It was listed as ‘Threatened’ in 1988 and from 1994 as Critically Endangered. The main threat to the species has been, and still is, poaching. The reintroduction of captive-bred birds

Plate 2. Bali Myna *Leucopsar rothschildi*, August 2016.



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into the wild has been an ongoing feature of this species’s management. The population in Bali Barat National Park, the last area where the species occurred naturally in the wild, numbers around 50 birds, and mostly if not exclusively consists of introduced birds (J. Eaton *in litt.* 2014, Eaton *et al.* 2015). Three additional released populations have been established, one near Sibang—about 12 birds in June 2014 (V. Nijman pers. obs.)—and two on offshore islands, Nusa Penida and Nusa Lembongan. While there was hope that these islands could become the new stronghold of the species, with some 120 birds on the former and 12 on the latter in 2012–2013, a 2015 survey showed that poachers had decimated the population, as it had declined by 85% (BirdLife International 2016a).

Black-winged Myna *Acridotheres melanopterus*

The conservation status of this species, protected in Indonesia since 1979 (Noerjito & Maryanto 2007), has changed rather rapidly from Least Concern (1988) to Near Threatened (2004), to Endangered (2013) and now Critically Endangered (2015), primarily due to concerns about the high levels of trapping from the wild for the cage-bird trade. Population numbers in the wild are at best guesstimates, but in most lowland areas where they were formerly observed they are no longer present; BirdLife International (2016b) estimates that the wild population is less than 250 mature individuals.

Javan Green Magpie *Cissa thalassina*

Formerly considered conspecific with green magpies on Sumatra and Borneo, the Javan Green Magpie is endemic to lowland and lower montane forest (500–2,000 m) in western Java, where Eaton *et al.* (2015) mentioned records from 18 locations. Although in the past deforestation may have brought population numbers down, certainly over the last decade it has become clear that trapping for the cage-bird trade is the most severe threat to the species. In 2012 its conservation status was uplifted to Critically Endangered (BirdLife International 2016c). Van Balen *et al.* (2011) estimated that the wild population was less than 100 individuals and quite possibly under 50. The species is not included on Indonesia’s protected species list.

Rufous-fronted Laughingthrush *Garrulax rufifrons*

This species is also endemic to western Java but, unlike the other three species in this survey, it is found exclusively in hill and montane forest from 900–2,400 m. As recently as 2000 its conservation status was assessed as Near Threatened, but in 2013 this was changed to Endangered and in 2016



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Plate 3. Rufous-fronted Laughingthrush *Garrulax rufifrons*, August 2016.

to Critically Endangered, primarily due to heavy trapping pressures. Population estimates are at best guesstimates, but BirdLife International (2016d) suggested less than 250 mature individuals, based on the highly restricted distribution and lack of recent records, including surveys of markets throughout Java. The species is not protected under Indonesian law.

Plate 4. Sugahaji market, Bandung, Indonesia, August 2016.



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Market surveys and analysis

We surveyed the following 12 markets in August 2016 (day in brackets): in Jakarta, Jatinegara (16 and 25), Pramuka (25) and Barito (26); in Bogor, Tanjakan Empang (28) and Pasar Bogor (29); in Bandung, Sugahaji (24); in Garut, Mawar (22) and Kerkhof (18 and 22); in Tasikmalaya, Cikurubuk (22); in Ciamis, Ciamis (23); in Kuningan, Cikuray (23); and in Cirebon, Kanoman (23). Of these markets Pramuka is by far the largest, with a four-storey building occupied almost exclusively by traders in birds and aviculture supplies such as food and cages, and typically some 100 shops sell wild-caught birds (Chng *et al.* 2015). Jatinegara and Sugahaji are the second largest, each with some 30–40 shops and also mobile vendors, selling wild-caught birds. The other markets comprise 10–30 permanent and mobile shops.

VN, having visited most of these markets in the past, often on numerous occasions, was familiar with the layout, characteristics and trade dynamics within and between the markets. All shops displaying birds were visited, numbers were recorded and, when feasible, prices were requested. All markets openly display illegally sourced and protected species, and there is no need to use undercover techniques to record the trade.

Prices reported here are based on those first quoted, although these may be reduced

after bargaining or when more than one bird is purchased at a time. Prices were quoted in Indonesian rupiah and are reported here in US dollars (US\$1 = IDR13,300), rounded up to the nearest dollar. Additionally, for selected birds we requested information on their origin (i.e. if they were captive-bred or wild-caught and where they originated from). All discussions with vendors were held in Bahasa Indonesia.

At each market we made an estimate of the number of people who were present during our visit. While the duration of our visits differed depending on the size of the market, this does give an indication of the numbers of visitors in these markets. We compare prices of birds in Jakarta with those in Bandung (for Bali Myna and Black-winged Myna) and Tasikmalaya (Rufous-fronted Laughingthrush).

Results

General observations

In the three largest markets—Pramuka, Jatinegara and Sugahaji—up to a thousand or more visitors were present during our survey. In Kanoman, visitors numbered several hundreds and in the other markets up to a hundred people were present. No estimates were made for Tanjakan Empang, Pasar Bogor or Kerkhof, as these were located along the side of roads, with many passing pedestrians. Apart from the markets in Bogor, where a few Caucasian visitors were present, all people in the markets appeared to be Indonesians. All conversations we overheard were held in Indonesian languages (Bahasa Indonesia, Betawi and Sundanese). Signs, when present, were written in Bahasa Indonesia, and all prices were given in Indonesian rupiah. As has been found in earlier surveys, we conclude that the open markets we surveyed cater predominantly or even exclusively to meet demand from the Indonesian domestic market.

Songbirds for sale

The trade in the Critically Endangered songbirds we were targeting was open, and there was no difference between the trading in legally protected species such as Bali Myna and Black-winged

Myna compared with non-protected species such as Rufous-fronted Laughingthrush. Often individuals of three of the four targeted species were prominently displayed in the front of shops, clear for all to see. The only exception was a single Javan Green Magpie that was kept in the back of a shop in Pramuka market. This bird was pre-ordered and not available for sale, and the vendor was not willing to give any information about its price or how often he obtained Javan Green Magpies. In other cases, vendors were perfectly willing to give price information and, when known, the origin of specific birds. The target species were found in five of the 12 markets; none were found in the seven markets at Garut, Ciamis, Kuningan, Cirebon and Bogor. A summary of the numbers of the target species observed is given in Table 1.

Sixteen Bali Mynas were observed in two markets, one in Jakarta and one in Bandung. All had closed rings, and according to vendors were captive-bred. Two single Bali Mynas in Bandung were priced at US\$752 each, whereas two pairs in Jakarta were priced at US\$902 and US\$1,278.

A total of 105 Black-winged Mynas were observed, in four markets in three towns. Only 15 of them had closed rings and one had a ring made out of a closed tie-wrap, which is useful for individual recognition but not as a means to mark captive-bred birds. Seventeen of the birds in Bandung were said to have been captive-bred, in Klaten (six birds) or Yogyakarta (two birds), an area well-known for breeding Black-winged Mynas (Owen *et al.* 2014), Salatiga (seven birds) and Bandung (two birds), whereas 20 of the birds in Jakarta were said to come from Klaten, with single individuals from Surakarta and Surabaya. Mean prices were similar in Jakarta (US\$88) and Bandung (US\$74), and combined, eleven quotations yielded an overall mean price of US\$79 (range US\$45–150).

Only one Javan Green Magpie was found, in Pramuka market, Jakarta. Its plumage was still green, suggesting that it had been taken from the wild only recently—the plumage of *Cissa* magpies in captivity for prolonged periods fades to blue (Collar *et al.* 2012)—and it did not have a leg ring. The bird was said to originate from ‘Subang’, a

Table 1. Numbers of four Critically Endangered songbirds in bird markets in West Java, Indonesia, August 2016.

Town, Market	Bali Myna	Black-winged Myna	Javan Green Magpie	Rufous-fronted Laughingthrush
Jakarta, Pramuka	12	71	1	1
Jakarta, Jatinegara		2		
Jakarta, Barito				3
Bandung, Sugahaji	4	31		
Tasikmalaya, Cikurubuk		1		1

district to the east of Jakarta and north of Bandung, but no further information was obtained. Common Green Magpies *Cissa chinensis*, of the race *minor* (native to Sumatra and Kalimantan), all unringed, were observed in Cikurubuk, Sugahaji, Pramuka and Barito; they were thought to have probably originated from Sumatra.

Five Rufous-fronted Laughingthrushes were found (four in two markets in Jakarta and one in Tasikmalaya), none had closed rings and vendors were unable to give their provenance. Based on three quotes the mean price was US\$83 (range US\$60–98). It is worth noting that most of the birds on offer in Pasar Cikurubuk, Tasikmalaya, were low-profile species and sometimes montane, and could have been caught locally, perhaps suggesting a south-west Javan origin for the Rufous-fronted Laughingthrush on sale there.

Discussion

We observed depressingly large numbers of Bali Mynas (16) and particularly Black-winged Mynas (105) in four of the 12 markets we surveyed in West Java. While the former are most likely all captive-bred, the lack of closed leg-bands on all but 15 of the Black-winged Mynas suggests that many may have been wild-caught, although 26 were claimed by vendors to originate from Klaten village. To the best of our knowledge, the only place in Indonesia where Javan Green Magpies and Rufous-fronted Laughingthrushes are bred in captivity is the Cikananga Wildlife Centre, West Java (Collar *et al.* 2012, Owen *et al.* 2014) and the birds of these species we found in the markets were almost certainly wild-caught.

The asking prices for these rare songbirds are low; in 2016 the average monthly wage for regular employees throughout Indonesia was estimated to be US\$160 (BPS 2016), and would be considerably higher in Jakarta. This puts these birds within the purchasing power of a large number of middle-class earners aspiring to keep rare songbirds. The

maximum monetary fine for catching, keeping or selling protected songbirds is US\$750—equal to the highest asking price we recorded for a single Bali Myna in Bandung—but illegal bird traders are rarely if ever prosecuted in Indonesia.

Compared with other recent surveys, e.g. Haryoko (2010) in Bandung, Garut and Tasikmalaya, Shepherd *et al.* (2015) and Chng *et al.* (2015) in Jakarta, and Chng & Eaton (2016) in eastern Java, the number of Black-winged Mynas we recorded is almost an order of magnitude higher, and the number of Bali Mynas we observed was also high (Table 2). Recent records of Javan Green Magpies and Rufous-fronted Laughingthrushes in markets are rare everywhere. Shepherd *et al.* (2016), reporting on the trade in laughingthrushes in eight Javan bird markets surveyed in 2014 and 2015, recorded four Rufous-fronted Laughingthrushes in three markets, making it the rarest of the five Indonesian species of laughingthrush found during their survey.

Prices we recorded in August 2016 for Black-winged Mynas are relatively low when compared with US\$169 in the June 2015 survey of eastern Java (Chng & Eaton 2016) and US\$270 in the July 2014 survey of Jakarta (Chng *et al.* 2015). It is very possible that the lower prices we were quoted was due to a higher availability of Black-winged Myna, possibly linked to higher numbers being produced by breeders in Klaten and/or elsewhere. Asking prices for Bali Mynas were comparable to those recorded in Jakarta in July 2014 (US\$586 quoted in Chng *et al.* 2015), and prices of Rufous-fronted Laughingthrushes were lower everywhere—US\$99 in Jakarta in 2014 (Chng *et al.* 2015), US\$133 in Surabaya in 2016 (Chng & Eaton 2016) and US\$160 in West Java in 2012 (Owen *et al.* 2014).

Government Regulation 8 (1999) indicates that only unprotected wildlife can be traded, and this is subject to an annual harvest quota. No quotas have been allocated for birds since 2002, other than for the capture of small numbers of a few designated

Table 2. Overview of recent market surveys in Java and records of four Critically Endangered songbirds found therein.

Date	Areas covered	No. of markets (towns)	Bali Myna	Black-winged Myna	Javan Green Magpie	Rufous-fronted Laughingthrush	Reference
October–November 2008	West Java	3 (3)		12			Haryoko 2010
May–July 2009	All Java	70 (58)		3			ProFauna 2009
April 2012	Jakarta & West Java	5 (3)	8	9		3	VN & KA-IN unpubl. data
July 2014	Jakarta	3 (1)	16	14		3	Chng <i>et al.</i> 2015
June 2015	Yogyakarta & East Java	5 (3)		7		1	Chng & Eaton 2016
August 2016	Jakarta & West Java	12 (8)	16	105	1	5	This study

species for use as breeding stock for commercial breeding operations. Therefore, the capture or trade of any wild birds in Indonesia is illegal, regardless of whether the species is listed as protected or not. With respect to the trade in captive-bred birds, only second and subsequent generations of captive-bred birds belonging to protected species can be traded. However, no individuals of species that are included in Appendix I of CITES (i.e. Bali Myna, since 1975) can be taken from the wild.

The monitoring of Javan bird markets has been sporadic (Table 2), and a more systematic approach is needed to assess the magnitude of the trade. It is beyond the scope of this study to make recommendations, although some can be found in Chng *et al.* (2015), Eaton *et al.* (2015) and Chng & Eaton (2016). However, we do feel that all individuals, including traders and buyers, found in violation of the law, especially where it concerns the world's most threatened species, should be prosecuted to the full extent of the law. Furthermore, in order to curb the domestic trade in these Critically Endangered species, the Indonesian authorities (municipal, provincial and national) must take urgent action in those places where the trade is most prevalent.

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